

III. *The Settling of a new Genus of Plants, called after the Malaysans, MANGOSTANS ; By Laurentius Garcin, M. D. and F. R. S. Translated from the French by Mr. Zollman, F. R. S.*

THE *Mangostans* is a kind of Pomiferous Tree, which grows in the *Molucca* Islands, the Fruit of which is one of the best in the World for eating.

ITS CHARACTER.

This *Genus* has its Flower compleat, tetrapetalous, regular, hermaphrodite, containing the *Ovary*. Its *Calix* is monopetalous, divided into four Lobes, roundish on the Edges, and hollowed in the Shape of a Spoon. The *Ovary* is very near cylindrical, with a Tube upon it cut out in the Shape of a Rose, which covers it like a little Cap. The *Stamina* which surround it, are spherical at the Top, their Number is four times that of the *Petala*. When these are gone off, the *Pistil* changes into a round Fruit, adorned with its *Calix*, and its Tube, cut into the Shape of a Star with Rays squared at the Corners. Its *Cortex*, which is thick and brittle, encloses a Cavity filled with as many pulpous and juicy Segments as there are Rays in the Tube. These Segments are white, in the Shape of a Half-moon, sticking together, and containing each but one Grain of Seed ;
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which latter is oblong, something flattened, resembling an Almond, wrapt up in a *Tunica*, which is covered with a hairy Coat of Fibres or Vessels, which together with the Pulp make up the *Parenchyma* of a Segment of the Fruit. The Leaves of the Tree are entire, smooth like those of the *Laurel*, and grow opposite to each other on the Branches. The Stem of the Tree grows up straight to the Top of its Tuft, and its Branches and Twigs come out opposite to one another like the Leaves.

I know but one Species of this *Genus*, which admits indeed of some Variation, but without any other Mark than what appears in the Fruit.

Mangostans *Garciaë*, Clus. Bont. *Arbor peregrina Aurantio simili fructu*. Clus. exot. 12. *Laurifolia Javanensis* C. B. Pin. 461.

ITS DESCRIPTION.

The *Mangostans* is a Tree of a very moderate Size. It does not grow above three Toises (about eighteen Feet) high. Its Stem runs up straight to the Top of its Tuft, like the Fir. This Tuft is regular, in Form of an oblong Cone, composed of many Branches and Twigs, spreading out equally on all Sides, without leaving any Hollow.

The Stem grows at Bottom to the Thickness of a Man's Thigh, or about eight or ten Inches in Diameter; it afterwards diminishes in Thickness by Degrees up to the Tuft. Its Wood is white, as long as the Tree is growing, but brownish when the Tree is cut down and dry. Its Bark is a little tender, and separates easily from the Wood; it is of a dark

Grey Colour, and slit, or full of Cracks up the Stem, but on the Twigs it is more even and greener, resembling that of *Evonymus*, or Spindle-Tree.

The Branches grow out of them by Stories, and opposite to one another ; those Stories cross each other obliquely, and not at right Angles. The Thickness of those Branches is always proportionable to that of the Stem at the Place where they come out of it : This Proportion is about one to four, or one to five. The Length of the inferior Branches of the Tuft is of five or six Feet, the others shorten as they come near the Top. The Distances of the Stories of the Branches are a little unequal, but where they are widest, they do not exceed the Length of the greatest Leaves, that is, eight or nine Inches.

The Twigs grow on the Branches in the same Order as those do on the Stem, that is, opposite to each other. The longest are commonly of the Length from one's Hand to the Elbow. The greater Twigs grow out to a certain Distance from the Stem, and the others which garnish the rest of the Branches, always grow less and less towards their Extremity.

The Branches and Twigs never divide themselves.

The Leaves are large, entire, beautiful, smooth, of a shining Green on the upper Side, and of an Olive Colour on the Back, pointed at their Extremities. The Rib which divides its Extent into two equal Parts, is straight, and equally prominent on both Sides. From the Sides of this Rib there issue forth Fibres pretty small, and almost by Pairs, which extend themselves in Parallels, and bent a little Arch-wise quite to the Edge of the Leaf, where they unite

unite themselves into a Thread, which forms there a kind of Margin. The Masles, or Filaments of the Net are not very perceptible. The Size of these Leaves varies; the largest are eight or nine Inches long, but commonly seven. The Breadth of each Leaf is near equal to half its Length, which Proportion is always the same in every Leaf. Their Pedicles are thick, short and wrinkled, flat on the Inside, and raised in the Shape of an Ass's Back on the Outside, most frequently half an Inch long. They come out near, and on the Extremities of the Twigs, opposite to each other like the Branches themselves. There appear seldom above two Pairs of Leaves on each Twig, and those that shoot out last always make up the Extremity of that Twig.

The Flower is of two Inches in Diameter, pretty much like a single Rose. It is composed of four *Petala*, almost round, or a little pointed, of the Breadth of an Inch, or thereabouts, very thick, firm, fleshy, brittle, and somewhat hollowed into the Shape of a Spoon. Their greatest Thickness is near their Basis, of above a Line, which decreases by Degrees towards the Extremity. They entirely resemble the *Petal* of a Rose, except that instead of being indented like a Heart, they end gradually into roundish Points (as I said before). Their Colour is also like that of a Rose, except that it is deeper and less lively. The Basis, which is the thickest and firmest Part of it, is the whitest, and the most brittle.

The Pistil, or *Ovary*, is a round or almost cylindrical Body, five Lines thick, raised to the Height of four. The upper Part of this Pistil, that is to say, its Tube, is cut in the Shape of a small Rose, covering
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ing the *Ovary* like a Cap. The Diameter of this Cap is of an equal Breadth with the *Ovary*, which it covers entirely, sticking very close to it. The Colour of the *Ovary* is a pale or whitish Green, and that of the Tube a White that is sullied or dirty.

The *Stamina* rise from the Base of the *Pistil*, they are whitish, round at the Tops, and raised to the Circumference of the Tube, applying themselves to the *Ovary*. They are sixteen in Number ; four for each *Petal*.

The *Calix* is of one Piece, expanded and cut into four Lobes down to its Basis. These Lobes are thick, round, skinny, hollowed in the manner of a Spoon, resembling also *Petala* of Roses not fully blown. They seem to cross one another like the *Petala*. The two upper Lobes are something larger than the lower ones ; they are greenish on the outside, and of a fine deep Red within, which makes them more agreeable to the Eye than the *Petala* ; the Red of the upper ones is more lively than that of the lower ones. All these Lobes in short are hollower than the *Petala* ; they do not cover those latter farther than half way their Height. This *Calix* encloses all the Parts of the Flower. It is supported by a Pedicle of seven or eight Lines long, its thickness being commonly of one third of its Length. This Pedicle is green, and constantly comes out of the End of a Twig above the last Pair of Leaves.

The Fruit is round, of the Size of a middling Orange : Its Bigness however varies very much, from one Inch and a half to two Inches and a half in Diameter. The Top of it is covered with a Sort of Cap embossed, cut out in the Shape of a Rose, or a Star with
Rays

Rays squared off, of a Finger's Breadth, or sometimes of an Inch in Diameter. The Rays of this little Rose are most frequently six or seven in Number, but seldom of five or eight. These Rays, by being thus squared, form together a kind of *Polygon*: This is the Part which had served for the *Tube* to the *Ovary*.

The Body of this Fruit is a *Capsula* of one Cavity, composed of a thick Shell, brittle, a little like that of a *Pomegranate*, but softer, thicker, and fuller of Juice. Its Thickness is commonly of three Lines: Its outer Colour is of a dark-brown Purple, mixed with a little Grey and dark Green; the inner Colour, that is to say, on the inside of the Case, is of a Rose Colour. Its Juice is purple. Last of all this Skin is of a styptick or astringent Taste, like that of the *Pomegranate*; nor does it stick to the Parts of the Fruit it contains. The inner Part of this Fruit is a furrowed Globe divided into Segments, much like those in an Orange, but unequal in Size, which do not adhere to each other. The Number of these Segments is always equal to that of the Rays of the Tube which covers the Fruit. The fewer there are of these Segments, the bigger they are. There are often in the same Fruit Segments as big again as any of those that are on the Side of them: Which will be easily seen in the Figure I have given of it.

These Segments are white, a little transparent, fleshy, membranous, fibrous, full of Juice like Cherries or Raspberries, of a Taste of Strawberries and Grapes together. Each of the largest Segments encloses a Grain of Seed of the Figure and Size of an Almond stripp'd of its Shell, having a Protuberance on one of its Sides, which is nothing else but its Navel.

Navel. This Grain is covered with two small Skins, the outermost of which serves for a Basis to the Filaments and Membranes of which the Pulp is composed. The Substance of these Grains comes very near to that of Chestnuts as to their Consistency, Colour, and astringent Quality. The *Calix* always remains sticking to the Fruit, to which it serves for an Ornament, and when half dried up, it is of the Colour of the *Pomegranate* Shell on the Outside. It covers about a sixth Part of the Circumference of the Fruit.

REMARKS.

Garcias, *Clusius*, and *Bontius*, are the first Authors who have made mention of the *Mangostans*; but they have left us only indifferent Descriptions, and so short ones, that it is not possible to form from them a sufficient Idea for discovering its Characters. The first of those Authors was ill informed, when he was told the Fruit of it was yellow. *Clusius* has spoke of it under two different Names, without apprehending that it was one and the same Plant. The Figure which he has given of the Fruit, and which he calls *Arbor peregrina Aurantio simili fructu*, though ill done, yet represents it enough to know it again. If in that Figure the Fruit appears little in relation to the Twig which supports it, this can be for no other Reason, but because he received from the *Indies* some of that Fruit which had been gathered before its State of Perfection, and after it drew his Figure. And hence it is, that the Fruit being shrunk up and imperfect, he found nothing in it

it but a few shrivell'd Grains, which were not much larger than those of a *Fig*.

It is surprizing however, that the most delicious Fruit of all the *Indies*, and which yields to none of the best in *Europe*, is that which of all has been hitherto least known. But as I have often eaten of it, and found it as excellent as it is reputed in the Countries where it is cultivated, I resolv'd to examine its Genus, to settle its Characters, and to give a Description of it, which might make it better known for the future to Botanists, and other curious Persons.

This Tree originally grows in the *Molucca* Islands, but for some Years past it has been transplanted into the Isle of *Java*, and some few at *Malacca*, in which Places it thrives very well. Its Tuft is so fine, so regular, so equal, and the Appearance of its Leaves so beautiful, that it is at present looked upon at *Batavia* as the most proper for adorning a Garden, and affording an agreeable Shade; yet there have been but few *Europeans* in the *Indies* who have made use of it for this Purpose, because they were unacquainted with it. They employ'd other Trees which did not near come up to it as to Usefulness and Beauty.

Travellers who make mention of its Fruit, always speak of it with great Encomiums. *Linschooten* is the only one who, after having given a Description of several *Indian* Fruits in his own way, thought it needless to describe the *Mangostans*, as well as some others, because, says he, they are little valued. Probably he never saw it, but upon Enquiry took upon Credit what some Person or other told him, who

knew nothing of it besides the Name, and confounded it with others which are little esteemed.

There are few Grains to be met with in this Fruit that are good for planting, for most of them are but abortive.

Sometimes this Fruit is found spoiled within, which may be known by yellow Spots appearing on some of the Segments. Some People scruple then to eat them, but others make no Difficulty about it. It is certain however, that they are not so good, especially if the Spots are considerable. I observed that this Corruption proceeded from the Juice in the *Capsula*, which being spoiled by the Sting of some Insect, and thereby becoming yellow, and spreading over the Segments of the Fruit, infected them with that Colour, and thereby changed them. This Wound is so small, and so hard to be discovered, that one often is left in a Doubt whether there be any at all.

One may eat a great deal of this Fruit without any Inconvenience, and it is the only one which sick People may be allowed to eat without any Scruple. It is very wholesome, refreshing, and more cordial than the Strawberry.

Its Shell has the same Virtue as that of the *Pomegranate*; at *Batavia* they make an Infusion and a Tincture of it against Loosenesses, and chiefly against Dysenteries. The Wood is good for nothing but firing.

In the *Memoires de Mathematique & de Physique de l'Academie Royale des Sciences de Paris*, of the Year 1692, Page 435 of the *Amsterdam* Edition, there is a short Description of the *Mangostans*
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by Father *Beze*, which is pretty good; but as he took the *Calix* for the Flower, it is plain he observed it not 'till after the *Petala* were fallen off. His Description is too short and defective for determining from thence alone the true Characters of this Genus.

EXPLANATION of the FIGURES.

Fig. 1. The Flower, as it appears in the Inside and Outside.

- a.* The four *Petala* of the Flower.
- b.* The four Lobes of the *Calix*.
- c.* The Tube.
- d.* The *Pedicle*.

Fig. 2. The *Calix* as it appears in the Inside with the *Pistil* and the *Stamina* :

- e.* The End of the Pedicle of the Flower, which supports the *Calix*.

Fig. 3. A *Petal*, as it appears on the Back, separated from the Flower :

- f.* Its Basis, which is the thickest, the firmest and the most brittle Part.
- g.* Four *Stamina* belonging to the *Petal*, arising from the Basis of it, and of the *Pistil*.

Fig. 4. The entire Fruit seen from the Side of the *Calix* or the *Pedicle*.

- h.* The *Calix*.
- i.* The *Pedicle*.
- k.* A Part of its Tube.

Fig. 5. The same, seen from the Side of the Tube, which is cut out in the Shape of a finall Rose :

l. The Tube, which always sticks fast to the Fruit.

m. The *Pedicle*, and Part of the *Calix*.

Fig. 6. The Fruit cut into two Halfs, containing six Segments :

n. The Segments good to eat, whereof some commonly are larger than the others.

o. The *Calix*.

p. The *Pedicle*.

Fig. 7. A separate Segment of the Fruit, in the Shape of a Half-moon, containing a Grain.

Fig. 8. A Grain or Seed separated from the Segment, the Coat whereof is covered with Filaments, which formed the *Parenchyma* of the Segment.

Fig. 9. A Leaf of the Tree which bears the *Mangostans*, with its Fellow cut off near the Bottom, supported by a Piece of its Twig.

